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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,273	09/23/2003	Steven J. Fredette	C-3240	6564
7590 06/30/2005			EXAMINER	
M. P. Williams 210 Main Street Manchester, CT 06040			AUSTIN, MELISSA J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/669,273

Applicant(s)

FREDETTE, STEVEN J.

Examiner

Melissa Austin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005 and 20 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1-6 are pending in this application after the amendment submitted 20 April 2005.

### ***Information Disclosure Statement***

2. An Information Disclosure Statement (IDS) has not been filed as of the mailing of this action.

### ***Specification***

3. The disclosure is objected to because of the following informalities: Page 2, lines 5-15: The applications listed as copending are improperly identified as such. Both applications were abandoned prior to the filing date of the current application.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

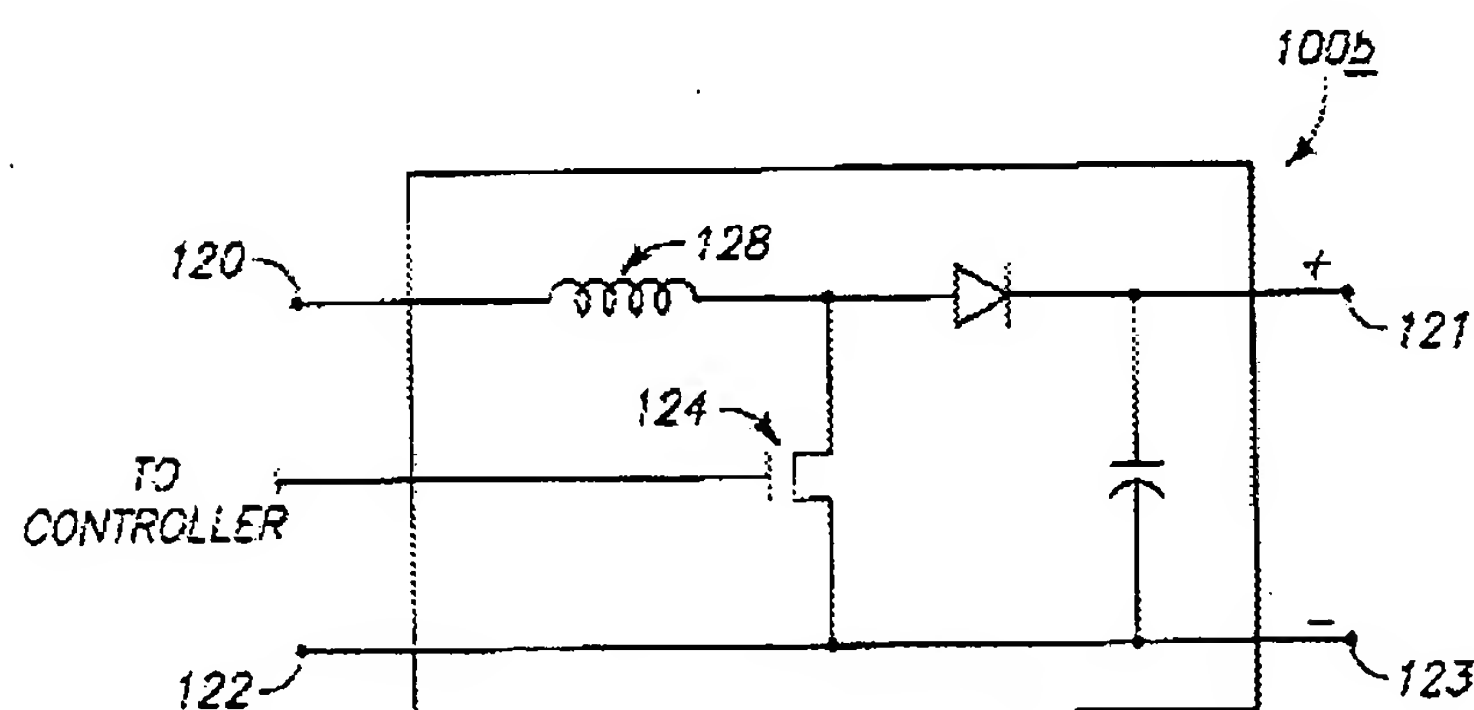
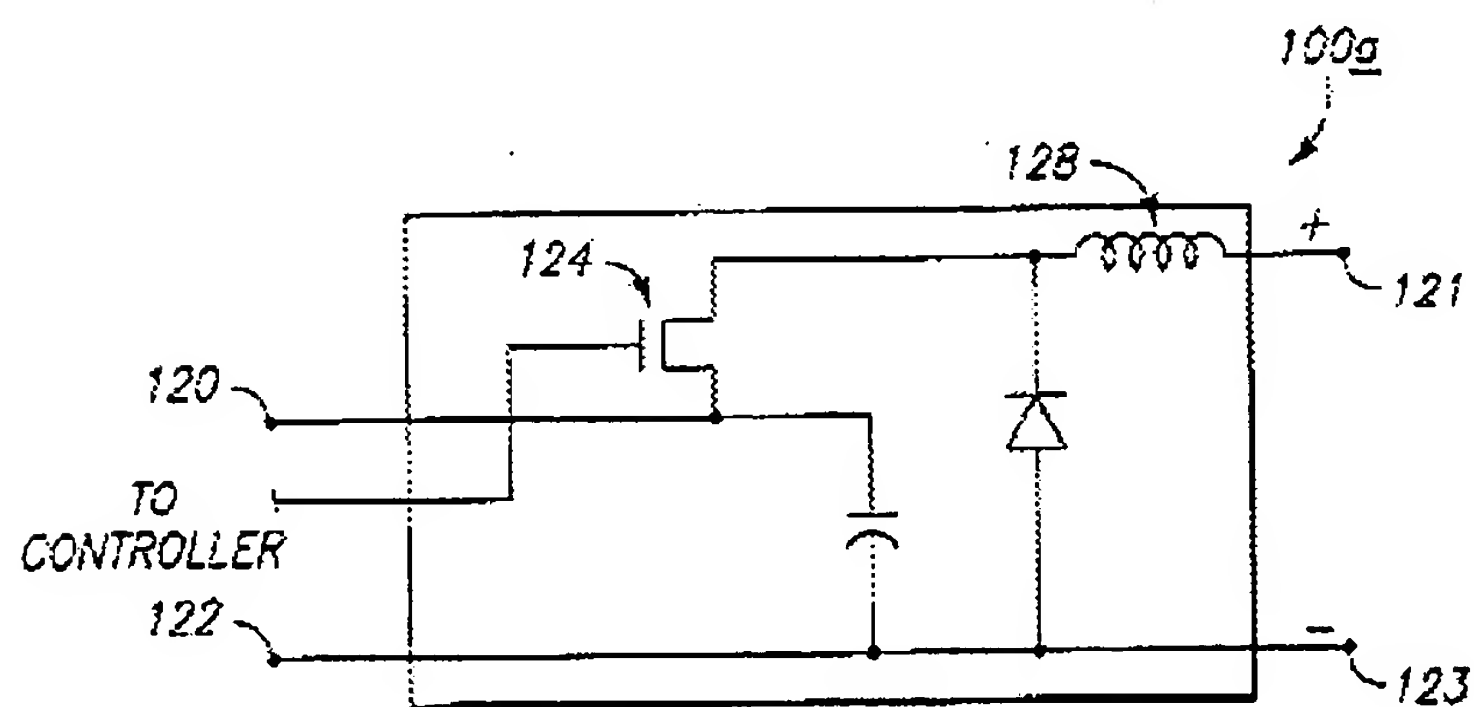
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. (U.S. Pre-grant Publication No. 2003/0091882 A1). Schmidt et al. disclose a fuel cell power system in which a controller is interconnected with a fuel cell

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stack and responsive to signals received by the controller to cause the fuel cell stack to start up or shut down, an energy storage system responsive to electrical output provided thereto to store corresponding energy, and storage control means operable by the controller. The energy from the fuel cells is used to charge the batteries when excess electrical energy is available, that is, not all of the generated energy is being applied to the external load; the batteries contribute to the energy delivered to the load when the fuel cell is providing less energy than the load demands. The storage control means may take one of the following forms, among others:



(Fig. 8 and 9; Pg. 1, [0003] – [0005]; Pg. 3, [0046] – Pg. 4, [0057], [0064]; Pg. 5, [0070]; Pg. 6, [0088] – Pg. 7, [0100]; Pg. 9, [0129], [0133]). However, Schmidt et al. do not disclose storage of energy during a transition, such as start up or shut down. One of

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ordinary skill in the art at the time the invention was made would have known that at shut down (that is, after the load has been removed from the fuel cell power system) an amount of residual reactants is present in the fuel cell stack that will continue to react, and thus generate electrical energy, until one of the fuel and oxidant streams is depleted. This energy is excess because it is more energy than is demanded by the load. Therefore, one of ordinary skill in the art at the time the invention was made would have stored the excess energy generated by the fuel cell at shutdown so that reactants are not wasted, the fuel cell won't be subject to corrosion from the residual reactants, and the batteries are maintained at a suitable charge level in case they are needed to provide energy to the load.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. (U.S. Pre-grant Publication No. 2003/0091882 A1) in view of Zhu et al. (U.S. Pre-grant Publication No. 2004/0219399 A1). Schmidt et al. disclose the elements of claims 1-4 as discussed in the above 35 U.S.C. 103 rejection and incorporated herein but fail to disclose the energy storage system being an electric battery disposed in a vehicle. Zhu et al. disclose a similar system in which the energy storage system may be a battery or a capacitor (Pg. 4, [0039]) and the external load may be a vehicle, appliance, computer, lighting, or communications equipment. One of ordinary skill in the art would have recognized at the time the invention was made that fuel cells are desirable for use in vehicles in place of internal combustion engines in order to reduce emissions. Therefore, one of ordinary skill in the art at the time the invention was made would have used as a power source for a vehicle as taught by Zhu et al. the fuel cell power plant as

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taught by Schmidt et al. in order to reduce emissions by replacing the internal combustion engine.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. (U.S. Pre-grant Publication No. 2003/0091882 A1) in view of Zhu et al. (U.S. Pre-grant Publication No. 2004/0219399 A1). Schmidt et al. disclose the claimed invention except that a battery is used as the energy storage system (as discussed in the above 35 U.S.C. 103 rejection and incorporated herein) instead of a capacitor. Zhu et al. shows that a battery and a capacitor are equivalent structures known in the art (Pg. 4, [0039]). Therefore, because these two energy storage systems were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a capacitor for a battery.

### ***Response to Arguments***

8. Applicant's arguments, see Remarks and amendment to the claims, filed 16 February 2005 and 20 April 2005, with respect to the 35 U.S.C. 112 rejection of claim 3 have been fully considered and are persuasive. The rejection of 3 December 2004 has been withdrawn.

9. Applicant's arguments, see Remarks and amendment to the specification, filed 16 February 2005, with respect to the objection to the drawings and specification have been fully considered and are persuasive. The objection of 3 December 2004 has been withdrawn.

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10. Applicant's arguments, see Remarks, filed 16 February 2005, with respect to the rejection(s) of claim(s) 1; 2, 4-6 under 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Schmidt et al.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Austin whose telephone number is (571) 272-1247. The examiner can normally be reached on Monday - Thursday, alt. Friday, 7:15 AM - 4:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mja  
Melissa Austin  
Patent Examiner  
Art Unit 1745

  
**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**